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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,451	04/14/2005	Takashi Kakiuchi	043890-0724	7007
20277 7590 07/26/2007 MCDERMOTT WILL & EMERY LLP 600 13TH STREET, N.W. WASHINGTON, DC 20005-3096			EXAMINER WEINSTEIN, LEONARD J	
			ART UNIT 3746	PAPER NUMBER
			MAIL DATE 07/26/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/531,451

Applicant(s)

KAKIUCHI, TAKASHI

Examiner

Leonard J. Weinstein

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 04/14/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 2 is objected to because of the following informalities: the following portion of the expressions lack the proper end parentheses:

$$\{(\sin^{-1}(s \cdot \sin(360^\circ - \theta) / L)\}$$

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-2, 4, 6, 10, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Kessler 4,406,590. Kessler teaches all the limitations as claimed for a hermetic compressor including: an electric motor element 46, a compression element 77 driven by the electric motor element 46, a closed container 27 accommodating the electric motor element 46 and compression element 77, and a refrigerant contained in the closed container 27, the compression element 77 comprising, a shaft (fig. 2) having an eccentric shaft body 190 and a main shaft body 60, a cylinder block 77 having a compression chamber 76, a piston 84 moving reciprocally in the compression chamber 76, connecting means 198 for connecting the piston 84 and the eccentric shaft body 190, and a balance weight 234 formed on the shaft (fig. 2) , wherein the piston 84 is positioned on a horizontal extension 192 of the balance weight 234, and wherein the balance weight 234 is formed in such a shape that the distance between the outer circumference of the balance weight 234 and the piston 84 is substantially constant in the

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closely approaching interval of the balance weight 234 and piston 84 as shown in figure 11; and a subsidiary shaft body 184 formed coaxially with the main shaft body 60, and a subsidiary bearing , element 188 of element 64, for supporting the subsidiary shaft body 184, wherein the balance weight 234 is provided at the end of the eccentric shaft body 190 side of the subsidiary shaft body 184.

Further with respect to claim 2 Kessler teaches a hermetic compressor wherein the axial center of the main shaft body is taken to be the origin; x-coordinate and y-coordinate of outer circumference of the balance weight can substantially be expressed as follows:

$$x = [s \cdot \cos(360^\circ - \theta) + L \cdot \cos\{(\sin^{-1}(s \cdot \sin(360^\circ - \theta) / L)\} + C - \alpha] \cdot \cos(360^\circ - \theta)$$

$$y = [s \cdot \cos(360^\circ - \theta) + L \cdot \cos\{(\sin^{-1}(s \cdot \sin(360^\circ - \theta) / L)\} + C - \alpha] \cdot \sin(360^\circ - \theta)$$

- Where s is the distance between axial center of main shaft body and axial center of eccentric shaft body,
- L , pitch length of connecting means,
- C , skirt length of piston,
- α , distance between outer circumference of balance weight and piston
- θ , rotation angle of eccentric shaft body

Kessler teaches all the limitations including a hermetic compressor having elements arranged in a configuration as discussed in claim 1. Since Kessler teaches the same configuration and the elements as discussed have the same spatial relationship as the instant application, a value for each the variables listed in the x and y coordinate expressions can be determined. Therefore the x and y coordinates of the outer

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circumference of the balance weight of Kessler (234) can be expressed by the equations as discussed.

Further with respect to claims 4 and 10 the recitation of a balance weight formed by either sinter alloy or press processing of iron plate is considered to be a product-by-process and is not patentable over the balance weight (234) of Kessler. The determination of patentability in a product-by-process claim is based on the product itself, even though the claim may be limited and defined by the process. That is, the product in such a claim is unpatentable if it is the same as or obvious from the product of the prior art, even if the prior product was made by a different process. In re Thorpe, 777 F.2d 695, 697, 227 USPQ 964, 966 (Fed. Cir. 1985). A product-by-process limitation adds no patentable distinction to the claim, and is unpatentable if the claimed product is the same as a product of the prior art.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
6. Claims 3 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kessler 4,406,590. Kessler discloses the general conditions of the claimed invention except for the express disclosure of a distance between an outer circumference of a balance weight and a piston is 2 mm or less. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the distance between outer circumference of a balance weight and a piston 2 mm or less, since the claimed values are merely an optimum or workable range. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.
7. Claims 5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kessler in view of Nozaki et al. US2004/0057859. Kessler teaches all the limitations as discussed but fails to teach the limitation that is taught by Nozaki for a hermetic compressor (fig. 1) wherein the refrigerant is R600a (Nozaki - ¶ 0030). It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a natural refrigerant such as isobutene (R600a) as the refrigerant in a hermetic compressor in order to reduce the global warming impacts of the operation of the hermetic compressor (Nozaki - ¶ 0002).
8. Claims 7-8 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kessler in view of Hayashi et al. 5,506,486. Kessler teaches all the limitations as discussed but fails to teach the following limitations that are taught by Hayashi for a hermetic compressor including: an electric motor element 1 driven by an inverter 40 at plural operating frequencies, as shown in figure 13 wherein the solid line shows a relationship between a range of operating frequencies and corresponding operating efficiency of the compressor, including at least an

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operating frequency of less than the power source frequency (col. 3 ll. 31-35) and at least an operating frequency of less than 30 Hz (fig. 13). It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an inverter to drive a motor of a compressor and operate a compressor at a frequency less than a power frequency in order to reduce electric power consumption (Hayashi – col. 59-62).

Conclusion

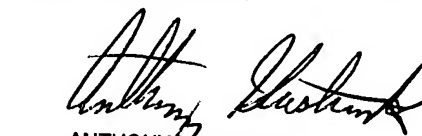
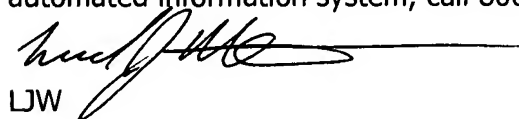
9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure are cited on form 892 herewith.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard J. Weinstein whose telephone number is 571-272-9961. The examiner can normally be reached on Monday - Thursday 7:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Stashick can be reached on 571-272-4561. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LJW



ANTHONY B. STASHICK
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700